

REMARKS/ARGUMENTS

Applicants' representatives would like to thank Examiner Dang for the courteous and helpful discussion of the issues in the present application, on June 8, 2004. The following comments further expand on this discussion.

Claims 1-20 are pending in the present application. Claims 1-12 have been currently amended, and new Claims 13-20 have been added. Support for the amended and new claims can be found throughout the specification and in the original claims. Particular support for amended Claims 1 and 4, and new Claim 13, can be found on pages 5, 7, 9-12 (lower limit of silica/alumina molar ratio) of the specification and in Figure 1. Particular support for amended Claims 2, 3 and 5-12 can be found in the respective original claims. Particular support for new Claims 14-16 and new Claim 20 can be found on pages 9-10 of the specification. Particular support for new Claims 17-19 can be found on pages 11-14 of the specification and in Figure 1. No new matter is believed to have been introduced by the amended or new claims.

Applicants respectfully request that the Examiner send return acknowledgment of the Information Disclosure Statement (IDS) filed on January 3, 2002, by returning a signed and initialed copy of the PTO-1449 Form (sheet 1 of 1) submitted with this IDS.

Applicants now provide additional remarks/arguments in response to the P.T.O. communication (Notice of Non-Compliant) dated September 10, 2004. Applicants note that the reply (amendment), prior to the present amendment, was filed on June 16, 2004, and not on December 12, 2003, as noted in the above P.T.O. communication, dated September 10, 2004.

Claim Rejections under 35 U.S.C. § 102(a)

The Examiner rejected Claims 1-9 under 35 U.S.C. § 102(a), as anticipated by U.S. 6,069,287 to Ladwig et al. (hereinafter the '287 patent). Applicants respectfully traverse based on the following reasons.

The '287 patent discloses a process for selectively producing C₂-C₄ olefins from a catalytically cracked or thermally cracked naphtha stream, in which the naphtha stream is contacted with a catalyst containing from about 10 to 50 wt% of a crystalline zeolite, having an average pore diameter less than about 0.7 nanometers (see Abstract). The reaction takes place at temperatures from about 500 to 650 °C, and a hydrocarbon partial pressure from about 10 to 40 psia (see Abstract). Preferred zeolites are selected from the family of medium pore (< 0.7 nm) crystalline aluminosilicates (see column 3, lines 39-42 and 52-67). This reference discloses that medium pore crystalline zeolites, with a silica to alumina molar ratio of less than 75:1, preferably less than 50:1, and more preferably less than 40:1, are of particular interest (see column 3, lines 42-45 and column 4, lines 13-14). However, this reference does not teach or suggest a catalyst composition comprising a large pore zeolite comprising a lattice of 12 tetrahedrons, and wherein the zeolite has a molar ratio of silica/alumina from 100 to 200.

At best, the '287 patent discloses ZSM-12 in a long list of zeolites, without particularly referring to this particular zeolite. However, this reference does not teach or suggest the combination of zeolite and silica/alumina ratio as recited in pending Claim 1. Moreover, Applicants have shown unexpected superior catalytic performance in terms of yield (product of selectivity and conversion) and duration, using a ZSM-12 zeolite within the claimed silica/alumina ratio, over both a ZSM-5 zeolite and a ZSM-12 zeolite outside the claimed silica/alumina ratio. These results are shown in Example 3 and Comparative Examples 4 and 5 on pages 11-18 of the present application. Applicants note that Example 3

and Comparative Examples 4 and 5 were preformed using the same equipment, under identical conditions, except for the catalyst used.

Thus, the '287 patent does not teach or suggest pending Claim 1. Since pending Claims 2-12, independently, depend directly or indirectly from Claim 1, the '287 reference does not teach or suggest these claims. In addition, new Claims 13-19 depend directly from Claim 1, and therefore, the '287 patent does not teach or suggest these claims.

New Claim 20 recites a process for the production of propylene comprising contacting a mixture of hydrocarbons with a catalyst composition, and wherein the mixture of hydrocarbons comprises predominately olefins, and wherein the mixture has a boiling point ranging from -15°C to +80°C, and wherein the catalyst composition comprises a large pore zeolite comprising a lattice of 12 tetrahedrons, and wherein the zeolite has a molar ratio of silica/alumina less than 200; and wherein the zeolite is prepared by the steps comprising: contacting sodium aluminate with an aqueous solution of tetramethyammonium hydroxide to form a mixture, contacting the mixture with colloidal silica to form a homogeneous gel, crystallizing the gel under hydrothermal conditions to obtain a first solid, washing the first solid with water to form a second solid, calcining the second solid in air to form a calcined solid, subjecting the calcined solid to an ion exchange using an aqueous solution of ammonium acetate to form a third solid, and calcining the third solid in air.

The '287 patent discloses, in general, examples, zeolites with an average pore diameter less than 0.7 nanometers, as discussed above. This patent does not teach or suggest the preparation of a large pore zeolite comprising a lattice of 12 tetrahedrons, and wherein the zeolite has a molar ratio of silica/alumina less than 200, by the process steps as recited in Claim 20, and does not teach or suggest such a zeolite, and its process of preparation, in combination with the other features recited in this claim. Thus, the '287 patent does not teach or suggest new Claim 20.

Therefore, for at least the above reasons, the '287 patent does not teach or suggest the present invention as now claimed, and the rejection should be withdrawn.

Claim Rejections under 35 U.S.C. § 103(a)

The Examiner rejected Claims 10-12 under 35 U.S.C. § 103(a), as unpatentable over the '287 patent. Applicants respectfully traverse based on the following reasons.

As discussed above, the '287 patent does not teach or suggest a catalyst composition comprising a large pore zeolite comprising a lattice of 12 tetrahedrons, and wherein the zeolite has a molar ratio of silica/alumina from 100 to 200. Therefore, the '287 patent does not teach or suggest Claims 10-12, which independently, depend directly, or indirectly, from Claim 1. Therefore, the rejection of Claims 10-12 should be withdrawn.

In addition, new Claims 13-19 depend directly from Claim 1, and therefore, the '287 patent does not teach or suggest these claims. Moreover, as discussed above, the '287 patent does not teach or suggest the preparation of a large pore zeolite comprising a lattice of 12 tetrahedrons, and wherein the zeolite has a molar ratio of silica/alumina less than 200, by the process steps as recited in Claim 20, and does not teach or suggest such a zeolite, and its process of preparation, in combination with the other features recited in this claim. Thus, the '287 patent does not teach or suggest new Claim 20.

Therefore, for at least the above reasons, the '287 patent does not teach or suggest the present invention as now claimed, and the rejection should be withdrawn.

Applicants submit that the present amendment now places the application in condition for allowance, and respectfully request early notice of such action. If any further issues remain in this case, Applicants respectfully request that the Examiner notify Applicants' undersigned representative.

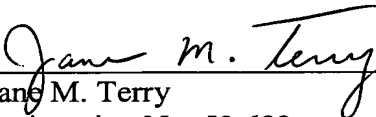
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